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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,357	06/23/2005	Kung-Won Nam	29347/50784	3488

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EXAMINER

MC GUTHRY BANKS, TIMA MICHELE

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

07/09/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/540,357

Applicant(s)

NAM ET AL.

Examiner

TIMA M. MCGUTHRY-BANKS

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Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5 and 8 is/are rejected.
- 7) ☒ Claim(s) 4, 6 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS) Paper No(s)/Mail Date 3/27/08
- 4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of Claims

Claims 1-8 are currently amended and Claims 9-15 are cancelled.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 27 March 2008 was filed after the mailing date of the non-final rejection on 4 January 2008. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

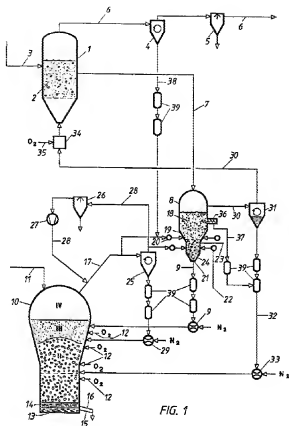
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by
Kepplinger et al (US 5,584,910).

Kepplinger et al anticipates the claimed invention. Kepplinger et al teaches in Figure 1 producing molten pig iron or steel preproducts:



The preheating reactor 1 is a fluidized layer preheating reactor, which reads on a fluidized bed (column 4, lines 33-38). Iron ore and fluxes are charged in charging duct 3 to preheating reactor 1 (column 4, lines 33-35). Regarding the limitation of drying, it is inherent that the mixture would be dry, since the charge is preheated to 850 °C (column 6, lines 13 and 14). Reduction reactor 8, also designed as a fluidized-layer reactor, receives and reduces preheated ore. A second or third fluidized layer reduction reactor may be used (column 6, lines 53-55). Fluxes are used for preheating and calcining (line 47). The melter gasifier comprises at least one supply duct 11 for coal (lines 56 and 57). Molten pig iron 13 and liquid slag 14 collect in the melter gasifier (lines 60 and 61). The reduced material is charged via sluices 39 (lines 31-33). Oxygen is supplied to the melter gasifier as shown in the figure. Exhaust gas in line 30 is used for the

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preheating reactor (column 5, lines 48 and 49). Regarding Claim 2, Figure 1 shows the preheating reactor before the fluidized bed. Regarding Claims 3 and 5, the fine ore is preheated in the fluidized zone of the reactor and subsequently flows to the reduction reactor (column 6, lines 11-16). Regarding Claim 8, the ore size is 12.7 mm or less (lines 5-10).

Allowable Subject Matter

Claims 4, 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding Claim 4, exhausting exhaust gas from a fluidized bed containing iron compounds is well known in the art as evidenced by Keplinger et al (line 6 in Figure 1), Jung et al (US 6,110,413) (column 5, lines 52 and 53), and Maeda et al (US 4,886,246) (column line 11 in Figure 1). However, the prior art of record does not disclose branching 20-40% of exhaust gases as claimed.

Regarding Claims 6 and 7, Maeda et al and Jung et al give examples of "high" flow rates in a fluidized bed for reducing iron ore: 7 m/s (column 8, line 10) and 7.34 m/s (Table 4), respectively. However, the prior art of record does not disclose or suggest a flow rate of 10-20 m/s as in Claim 7 or 20-30 m/s as in Claim 6.

Response to Arguments

Applicant's arguments filed 28 April 2008 have been fully considered but they are not persuasive. Applicant's arguments are addressed in the rejection of the claims above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMA M. MCGUTHRY-BANKS whose telephone number is (571)272-2744. The examiner can normally be reached on M-F 7:00 am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art Unit
1793

/T. M. M./
Examiner, Art Unit 1793
9 July 2008